MANAGING OUR NATION'S NUCLEAR WASTE

POSTTEST

Directions: Circle the letter of the answer that **BEST** completes the statement.

1. Nuclear energy supplies slightly more than ____ of our Nation's electricity:

   a. 5%

   b. 10%

   c. 20%

   d. 40%

2. Which of the following is **NOT** a category of nuclear waste?

   a. bottom ash

   b. high-level waste

   c. low-level waste

   d. transuranic waste

3. Most of the radioactivity in nuclear waste is found in:

   a. low-level waste from nuclear powerplants

   b. low-level waste from defense activities

   c. spent fuel from nuclear powerplants

   d. transuranic waste from defense activities

4. In 1993, final disposal of low-level nuclear waste from nuclear powerplants became the responsibility of the:

   a. electric utilities that produce the waste

   b. States where the waste is produced

   c. Federal Government

   d. local governments where the waste is produced

5. The spontaneous emission of ionizing radiation in the form of particles and rays by an atom is called:

   a. radioactivity

   b. atomization

   c. spontaneous combustion

   d. current emissions

6. The least penetrating type of ionizing radiation emitted by nuclear waste is the:

   a. alpha particle

   b. beta particle

   c. proton

   d. gamma ray

7. Because it deposits less energy per unit path length, the type of radiation least likely to cause biological damage is the:

   a. alpha particle

   b. beta particle

   c. proton

   d. gamma ray

8. In the United States, the source of the least annual radiation exposure for the average person is:

   a. nuclear powerplants and waste from the nuclear fuel cycle

   b. medical diagnosis and treatment

   c. cosmic rays, rocks, and soil in our natural environment

   d. radon

9. Some of our internal exposure to radiation comes from the presence of radioactive _____ in our bodies and some essential foods:

   a. iron

   b. oxygen

   c. carbon

   d. hydrogen

10. Over time, as a result of radioactive decay, nuclear waste will:

    a. significantly decrease in mass and volume (space occupied)

    b. retain the same level of radioactivity but cool down

    c. become less radioactive

    d. become more radioactive

11. The average American receives an annual exposure to radiation of about 360 millirem from:

    a. nuclear powerplants

    b. cosmic radiation

    c. medical diagnosis

    d. all sources

12. The 1987 decision to study only Yucca Mountain, Nevada, to see if it will be suitable for disposal of high-level waste was made by:

    a. the State of Nevada

    b. the U.S. Congress

    c. the U.S. Environmental Protection Agency (EPA)

    d. the U.S. Department of Energy (DOE)

13. According to the Low-Level Radioactive Waste Policy Act, low-level wastes may be:

    a. stored by the State or a region compact facility

    b. stored indefinately in Hanford, Washington, and Barnwell, South Carolina

    c. must be stored in a geologic repository

    d. cannot be disposed of

14. During site characterization, some studies will focus on:

    a. the geology of the site

    b. the hydrology of the site

    c. potential for earthquakes or volcanic activity

    d. all of the above

15. A disadvantage for a potential repository site would be:

    a. a repository location in the unsaturated zone

    b. the presence of zeolites in the rock

    c. land owned by the Federal government

    d. potential for seismic (earthquake) activity

16. Geologic disposal of high-level nuclear waste in a repository is being planned:

    a. only by the United States

    b. only by the United States, France, and the United Kingdom

    c. by all countries with high-level nuclear waste, except the United States

    d. by all countries with high-level nuclear waste, including the United States

17. High-level nuclear waste from defense activities and spent fuel from nuclear powerplants will be permanently disposed of:

    a. in a mined geologic repository deep underground

    b. in above-ground specially designed concrete repositories

    c. in spent fuel pools

    d. in sub-seabed geologic repositories

18. The costs of disposing of high-level waste from defense activities will be paid by:

    a. fees charged to utilities that use nuclear energy to produce electricity

    b. State income taxes in all 50 States

    c. special fees in States that have military bases

    d. the Federal Government

19. By the year 2000, it is expected that cumulative inventories of spent fuel from nuclear powerplants will:

    a. stay the same

    b. nearly double

    c. triple

    d. decrease

20. If the President recommends a site for a repository to the U.S. Congress, the State where the site is located may:

    a. impose user fees

    b. veto the site and prevent its use unless Congress overrides the veto

    c. name an alternate site in the State for a repository

    d. all of the above

21. To receive certification by the Nuclear Regulatory Commission, a cask must pass a:

    a. drop test

    b. fire test

    c. water immersion test

    d. all of the above

22. Spent fuel must be isolated from the environment until the total hazard it presents reaches the hazard of uranium ore, in about:

    a. one hundred years (100)

    b. ten thousand years (10,000)

    c. one million years (1,000,000)

    d. ten million years (10,000,000)

23. Waste placed in the repository **CANNOT** be in:

    a. ceramic form

    b. glass form

    c. liquid form

    d. solid form

24. The repository will isolate the waste from the environment by:

    a. the host rock alone

    b. a multiple barrier system

    c. the solid form of the waste alone

    d. the waste container alone

25. One technical challenge of the waste management program is:

    a. one State will be asked to bear the burden of hosting a waste facility for waste from many States

    b. the waste facility must be designed to withstand the heat that the waste will continue to produce for many years

    c. waste shipments will travel through many States on the way to the disposal facility, whether or not it was produced in those States

    d. States may disagree about which State should host the regional compact disposal facility